

Quarterly Report – Public Page

Date of Report: *July 11, 2011*

Contract Number: *DTPH56-10-T-000017*

Prepared for: *Department of Transportation*

Project Title: *Fuelfinder: Remote Leak Detector for Liquid Hydrocarbons*

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The Fuelfinder program objective is to develop a prototype handheld mid-IR stand-off sensor for early detection of hydrocarbon leaks from buried pipelines. The technical basis for the sensor is an extension of PSI's commercial near-IR methane leak detector, RMLD. In the Fuelfinder configuration, the RMLD near-IR laser and detector components will be replaced by mid-IR equivalents, based primarily on PSI's subsidiary company Maxion Technologies' proprietary Interband Cascade Laser (ICL) capability. PSI's license commercial supplier of the RMLD, Heath Consultants, is a cost-sharing partner responsible for assisting PSI in developing a manufacturable product that meets the needs of the user community. Kinder-Morgan, one of the largest owners of pipeline distribution systems in the US, is also a cost-sharing partner responsible for assisting PSI in understanding typical leak scenarios and operational constraints.

Results and Conclusions:

During the reporting period, room-temperature ICL devices with 20 mW cw power were demonstrated. Models of Fuelfinder performance for selected spectral windows were completed. Laboratory validation of performance models has begun.

Plans for Future Activity:

In the next quarter, we plan to complete validation of the Fuelfinder performance model and initiate growths of targeted ICL wavelengths.